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ABSTRACT

An investigation which attempted to determine the relative effectiveness of monolingual and bilingual glossaries in teaching foreign language vocabulary to adults is described. Eight matched groups of students (four each in two separate experiments) were taught new English words according to two different principles. In half the groups, the meaning of the words was explained in the target language, English (monolingual glossaries), while the other groups were taught the meaning of the words by using the native language equivalents (bilingual glossaries). Two sessions were conducted for each group. Half the groups were taught monolingually in the first session and bilingually in the second; the other half received the reverse treatment. The only variables in the experiments were the glossaries. The results proved to be consistently in favor of the bilingual treatment and are presented in detail by means of several tables. The present work also includes a summary of previous research on vocabulary learning. (PM)

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MONOLINGUAL AND BILINGUAL VOCABULARY LEARNING

An Empirical Investigation

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1. Introduction and Aims

Most foreign language students experience at one time or another difficulties in acquiring a proper lexical command of the new code. Older students in particular often find it difficult to retain and expand their vocabulary and feel that this problem is the chief obstacle to real language mastery. Accordingly vocabulary expansion should be recognized as a major problem area in language learning and an important object of scientific investigation. There is, however, a regrettable paucity of experimentation and evidence in the field. This paper describes an investigation which attempted to determine the relative effectiveness of monolingual and bilingual glossaries in teaching foreign language vocabulary to adults. Eight matched groups of students were taught new English words according to two different principles. In the one case the meaning of the words was explained in the target language, i.e. English (monolingual glossaries), and in the other the meaning of the words was explained by means of the native-language equivalents (bilingual glossaries). The experimental teaching was centered around two texts containing the words to be learned. The only variables in the experiments were the glossaries.

2 Previous Research

As indicated above there has not been a great deal of research on vocabulary learning. Most of the research involving verbal material

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has been concerned with quite general laws of learning (retention, forgetting, transfer-of-training, etc.) often on the basis of memorization of lists of nonsense syllables paired with meaningful partners in various ways. The following classroom experiments all have some bearing on my own investigation.

Seibert (1930) investigated the relative effectiveness of studying lists of French words in English-French associated pairs vs. in context (sentences). She concluded that the method of learning foreign vocabulary by association to the native language in bilingual lists is superior to the method of learning it in a context or by a mixed method.

In an experiment which was otherwise very similar to Seibert's Löfgren (1968) used more elaborate post-tests to measure the effects of bilingual and contextual glossaries. Secondary school students studied German words explained either through a context (contextual word-list) or by means of native-language translations (bilingual word-list).

Overall the post-test results showed that the bilingual word-list yielded significantly better learning. The students who had used the bilingual glossary were better able to produce the words and to give the correct definite article. They were also better than the "contextual" students at spelling and could use the words more accurately in sentences of their own. The "contextual" students tended to write longer sentences and to use a larger number of different words. In the latter case the difference was statistically insignificant.

The translation method has been tested for effectiveness from various other view-points. By way of example may be mentioned a study by Hall (1969), who compared the effects of a bilingual word-list with a pictorial list and a combination of the two (bilingual and pictorial) in the learning of concrete nouns in German. It was found that the pictorial list yielded the best and the bilingual list the poorest learning. It is to be noted that only concrete nouns that were easy to depict were included.

An experiment with monolingual and bilingual glossaries carried out by Löfgren (1966) is of immediate relevance to my own investigation. Six secondary school classes reading intermediate German studied two

texts containing a number of new words. To each text there was a bilingual and a monolingual glossary. The post-tests showed that the students who had studied by means of bilingual glossaries achieved significantly better results than the students who had studied by means of monolingual glossaries. The superiority was sustained in a retention test after seven weeks.

3. The Present Investigation

Subjects and Design. The investigation comprised two experiments. A total of 60 students took part in the first experiment and a total of 46 in the replication half a year later. The average age of the subjects was 23 years. The majority had studied English for about five years previously. Two different schools were involved.

The subjects were matched on the basis of proficiency test results and were then assigned at random to two different treatment groups. In all, eight groups were involved. As an extra precaution against undesired group variability, provisions were made for all subjects to have both types of teaching. Half the groups were taught monolingually in the first session and bilingually in the second. The other half were taught bilingually in the first session and monolingually in the second. Tests were administered after each session. The design is represented in Figure 1:

	First Experiment				Replication			
Group:	1	2	3	4	5	6	7	8
Lesson 1 (Text 1)	Monol.	Bil.	Mon.	Bil.	Mon.	Bil.	Bil.	Mon.
Lesson 2	Tests A and B on Text 1							
Lesson 3 (Text 2)	Bil.	Mon.	Bil.	Mon.	Bil.	Mon.	Mon.	Bil.
Lesson 4	Tests A and B on Text 2							

Figure 1
The Design of the Experiments

The Lessons. The lessons were taught by four experienced teachers, two at each school. Each teacher taught both monolingual and bilingual lessons. Work in class consisted of text reading, chorus reading of the words in the lists, conversation around the texts, explanation of difficult points in the texts. In each lesson there was a period of ten minutes for individual work during which the students tried

to memorize the words. At the beginning of the experiment the students had been informed that they were to learn a number of new words and that they would be tested afterwards.

The lessons were all conducted in the foreign language. The native language was only used in the form of translations of the new words in the bilingual lessons.

The Teaching Materials. Two texts, and to each a monolingual and a bilingual glossary, were produced for the experiments. The glossaries to Text 1 comprised 32 items, and the glossaries to Text 2 38 items. In order to fit the experiments as closely as possible to ordinary classroom teaching as practised in today's schools a good number of the vocabulary items were selected from modern and widely used monolingual textbooks. The English explanations to the rest of the words were written by the author and native speakers.

The Tests. After careful consideration my decision was to employ and mix two different kinds of task in the main test (Test A), namely a variant of the cloze procedure and picture-referenced fill-in items. In every blank of the latter type there was a number referring to a picture in a separate booklet. The pictures represented the words (concrete nouns) to be inserted in the blanks. The cloze items tested adjectives and verbs. Each test consisted of 25 items.

A very important aim of the investigation was to try to find out whether learning new words entirely with the help of the target language results in some learning that is not as easily acquired if the words are learned through the source language. The most likely subsidiary learning of such a kind would be an enhanced readiness to respond with the appropriate words to questions transformed from the target-language definitions. Let us take an example to clarify this. In Text 1 the word squirrel occurs. The bilingual glossary provides the Swedish name of the animal, viz. 'ekorre', and nothing else, whereas the monolingual glossary has the following English description:

> "A small wild animal which lives in trees and has a bushy tail. It collects nuts."

Now, even under the assumption that the monolingually trained students perform poorer in the direct test on the item than do the bilingually trained students, one may very plausibly argue that the latter do not as readily as the former respond appropriately to a question derived from the target-language definition quoted. The following question

would thus be easier to understand and answer for the students who have studied the monolingual glossary:

"What is the English word for a small wild animal which lives in trees and has a bushy tail? It collects nuts."

In order to test the hypothesis seven such straight-forward target-language questions were formulated to each of the two texts (Test B). The students were to write down their answers. All questions were closely linked to the definitions in the monolingual glossaries.

Results. Two sets of achievement scores were distinguished, viz. those obtained by the subjects who took part in all four lessons (two double sessions) and those obtained by all subjects, i.e. including those who missed either session. In view of the fact that the two kinds of scores differed very little from each other I will present the calculations based on the larger sample.

Table 1 summarizes the results of the first experiment:

Table 1

Achievement Test Results in the First Experiment (Groups 1-4), All Subjects

		Test A		Test B		Total	
		M	S.D.	M	S.D.	M	S.D.
TEXT 1	Monolingual N = 28	8.00	5.54	3.00	2.15	11.00	7.39
	Bilingual N = 23	11.78	6.74	3.91	2.26	15.70	8.68
TEXT 2	Monolingual N = 23	12.39	6.56	4.00	2.20	16.39	8.49
	Bilingual N = 29	16.52	6.43	4.66	1.81	21.17	8.01
TOTAL	Monolingual N = 51	9.98	6.35	3.45	2.21	13.43	8.28
	Bilingual N = 52	14.42	6.92	4.33	2.04	18.75	8.67

The results are consistently in favour of the bilingual treatment. The difference between the totals of Test A is statistically significant at the .01 level of confidence ($t = 3.39$). Counter to what was expected the bilingual glossaries also produced better results on Test B. The difference is relatively smaller than on Test A, but it is still significant ($p < .05$).

The outcome of the replication is reported in Table 2:

Table 2

Achievement Test Results in the Replication (Groups 5–8), All Subjects

		Test A		Test B		Total	
		M	S.D.	M.	S.D.	M	S.D.
TEXT 1	Monolingual (N = 25)	11.20	5.76	3.80	1.83	15.00	7.32
	Bilingual (N = 21)	11.48	6.53	4.29	1.95	15.77	8.31
TEXT 2	Monolingual (N = 17)	13.24	6.78	5.06	1.60	18.29	8.13
	Bilingual (N = 18)	16.05	5.49	5.61	1.20	21.67	6.35
TOTAL	Monolingual (N = 42)	12.03	6.20	4.31	1.83	16.33	7.74
	Bilingual (N=39)	13.59	6.42	4.90	1.76	18.49	7.95

The replication results confirm the earlier findings insofar as higher mean scores were achieved by means of the bilingual glossaries, but the differences are smaller than in the first experiment. The difference between the totals of groups 5–8 is not statistically significant (.05 level).

As the two experiments were identically designed and executed the results may be added up in one comprehensive table, summarizing the main findings (Table 3):

Table 3

The Combined Achievement Test Results (Groups 1–8), All Subjects

		Test A		Test B		Total	
		M	S.D.	M	S.D.	M	S.D.
TEXT 1	Monolingual (N = 53)	9.51	5.82	3.38	2.03	12.89	7.56
	Bilingual (N = 44)	11.64	6.56	4.09	2.10	15.73	8.41
TEXT 2	Monolingual (N = 40)	12.75	6.58	4.45	2.02	17.20	8.29
	Bilingual (N = 47)	16.34	6.03	5.02	1.66	21.36	7.35
TOTAL	Monolingual (N = 93)	10.91	6.33	3.84	2.08	14.74	8.13
	Bilingual (N = 91)	14.06	6.69	4.57	1.94	18.64	8.32

The bilingual glossaries systematically yielded better learning

results than the monolingual glossaries. The difference between monolingual and bilingual grand total means (14.74 and 18.64, respectively) is statistically significant at the .01 level of confidence ($t = 3.22$). The hypothesis that monolingually trained students would perform better than bilingual students on Test B, which was slanted towards the monolingual treatment, has not been borne out by the data. The difference is instead in favour of the bilingual method ($p < .05$). Thus, I have not been able to demonstrate that the monolingual study of foreign words results in a better ability to respond to stimulus sentences derived from the target language definitions in the monolingual glossaries.

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